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REMARKS

I. INTRODUCTION

In response to the Office Action dated January 23, 2007, claim 19 has been amended. Claims 1-3, 5-12, 14-21, and 23-27 remain in the application. Entry of these amendments, and re-consideration of the application, as amended, is requested.

II. CLAIM AMENDMENTS

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III. PRIOR ART REJECTIONS

A. The Office Action Rejections

In paragraphs (3)-(4) of the Office Action, claims 1-3, 5-12, 14-21, and 23-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Melchione et al., U.S. Patent No. 5,930,764 (Melchione).

Applicants' attorney respectfully traverses these rejections.

B. The Applicants' Independent Claims

Independent claims 1, 10 and 19 are directed to a method, system and article of manufacture for generating analytic data sets for use in modeling in customer relationship marketing. Claim 1 is representative, and comprises a computer-implemented method of generating analytic data sets for use in modeling in customer relationship marketing, comprising: (a) specifying one or more Variable Groups, wherein each Variable Group is a set of one or more Analytic Variables with similar characteristics and each Analytic Variable is comprised of both primitives and conditions; (b) creating an Analytic Data Set Template containing one or more of the Analytic Variables selected from the specified Variable Groups that are required for a specific analysis task, wherein execution conditions are defined for the Analytic Data Set Template; and (c) automatically generating SQL statements to retrieve and generate the Analytic Variables contained in the Analytic Data Set Template from a database using the primitives and conditions of the Analytic Variables.

C. The Melchione Reference

Melchione describes a sales process support system and method for identifying sales targets using a centralized database to improve marketing success. The system includes a central database that receives comprehensive information from a variety of internal and external feeds, and standardizes and households the information in a three-level hierarchy (households, customers, and accounts) for use by a financial institution. The comprehensive information stored on the central database is accessed through micromarketing workstations to generate lists of sales leads for marketing campaigns. A database engine is provided for generating logical access paths for accessing data on the central database to increase speed and efficiency of the central database. The system distributes sales leads electronically to branch networks, where the sales leads are used to target customers for marketing campaigns. The central database is accessed by workstations of a central customer information system for profiling customers, enhancing customer relationships with the financial institution, and electronically tracking sales and service performance during marketing campaigns. The system can also include a system for opening an account in a single session that is in communication with the central database, micromarketing centers, central customer information systems and branch systems of the present invention so that data can pass between these systems where legal and appropriate.

D. Applicants' Claims Are Patentable Over The References

Applicants' invention, as recited in independent claims 1, 10 and 19, is patentable over the Melchione reference, because the claims recite limitations not found in the reference.

Nonetheless, the Office Action asserts that Melchione teaches the Applicants' claimed invention, because Melchione discloses all the elements recited in Applicants' independent claims:

Claims 1-3, 5-12, 14-21 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melchione et al (US 5,930,764).

As per claim 1, 10 and 19, Melchione teaches generating data sets (column 5, line 34: "database" which contains sets of data) for use in customer relationship marketing (column 5, lines 55-57: "target optimum groups of customers for each marketing campaign conducted.") comprising: specifying one or more variable groups (column 20, line 1-2: "summary variables"), where the group is a set of analytic variables with similar characteristics and the analytic variables are comprised of both primitives and conditions (column 20, line 4: "characteristics" whereby the data is sorted according to set characteristics it has in common. And it is known that SQL databases utilize primitives and conditions to sort data); creating an analytic data set template containing one or more of the analytic variables selected from the

specified variable groups and required for a specific analysis task, wherein execution conditions are defined for the analytic data set template (column 17, lines 62-67: "If the user requests and saves the keys, the user can then use the saved keys to pick up different set of fields (using the data extractor component of the database engine) at different times. Alternatively, the user can further reduce the set of keys (and save the new set, instead of, or in addition to the old set of keys) by applying additional criteria to the old set." Where the data extractor is used as a template for entering search criteria. Templates are known with SQL databases as well as the use of conditional statements for sorting the data.); and generating SQL statements to retrieve and generate analytic variables contained in the template from the database using the primitives and conditions of the analytic variables (column 18, lines 24-30: The data extractor component of the database engine 40, which can execute alone or with the first key extract component, has the function of pulling the desired data from the database once the keys have been extracted. If it executes with the first component, the keys may not even have to be saved on a table but passed through host program variables from previous SQL statements." Melchione utilizes a SQL database which means that the SQL query language is used to structure queries and extract information from the database. SQL is known to contain primitives which are basic operations used to support more complex operations such as functions, procedures and methods.

Conditions are also inherent to the SQL language as they utilize the word "if" with a conditional statement. SQL also contains variables or characteristics used to represent a value or expression and can be replaced with real data to process different data sets. SQL was developed by IBM in the 1970s and has become an ISO and ANSI standard for querying relational databases. SQL is a database query and programming language widely used for accessing, querying, updating, and managing data in relational database systems. Using SQL, you can retrieve data from a database, create databases and database objects, add data, modify existing data, and perform other, more complex functions. With SQL, you can also change the server configuration, modify database or session settings, and control data and access.).

In addition, the Office Action asserts the following:

Remarks

5. Applicants' attorney asserted that Melchione does not teach the claimed invention. Applicants further supported their assertion by arguing that the Melchione reference does not teach or suggest specifying one or more Variables Groups each Variable Group is a set of one or more Analytic Variables with similar characteristics and each Analytic Variable is comprised of both primitives and conditions. In response, the examiner respectfully with the applicants' attorney because Melchione teaches product related conditions using analytic variables that are totally dependent on the product, such as financial (account balance, amount of transfers, etc.) and descriptive (open date, marketing status) variables (col. 28, lines 5-14; col. 22, lines 10-45).

In addition, applicants' attorney argues that there is no discussion in the portions of Melchione of analytic variables that comprised of both primitives, conditions and any groups. In response, the examiner respectfully disagrees because

Melchione teaches the concept of analytic variables on the product. Note col. 28, lines 5-14 of Melchione.

In response to applicants' argument that the Office Action assertions that it is known that SQL databases utilize primitives and conditions to sort data are insufficient and based on hindsight, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It is noted that Melchione teaches an SQL database for storing conditions (col. 3, lines 19-65).

Furthermore, in response to applicants' argument that the Office Action assertions that templates are known with SQL databases as the use of conditional statements for sorting the data are insufficient and based solely on hindsight, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants' attorney disagrees with this analysis. Specifically, Applicants' attorney asserts that the Melchione reference does not teach or suggest all the limitations of Applicants' independent claims.

1. The Melchione reference does not teach or suggest "specifying one or more Variable Groups, wherein each Variable Group is a set of one or more Analytic Variables with similar characteristics and each Analytic Variable is comprised of both primitives and conditions."

The Office Action asserts that Melchione teaches Applicants' claimed limitation "specifying one or more Variable Groups, where the Variable Group is a set of Analytic Variables with similar characteristics and the Analytic Variables are comprised of both primitives and conditions," at column 20, line 1-2, column 20, line 4, column 28, lines 5-14 and column 22, lines 10-45, which are set forth below:

Melchione: column 20, line 1-2

If the user wants to specify the product code at the service type level, the query can be answered in one step by using the flags and summary variables at the household level.

Melchione: column 20, line 4

However, even in this case the user may want to specify other characteristics that the product must have (open date, individual account balance, etc.) that are only available at the account level.

Melchione: column 28, lines 5-14

Upon selecting Analytic Workstation or Micromarketing from the menu of FIG. 5A, the workstation will next display a main menu, as shown in FIG. 5B, to provide high-level access to functions required for creating and opening the query, report, and process objects used by the workstation 12. From the main menu, the user is given the option to create a new query, report, or process, or to open an existing one. If the user chooses to create a new query, for example, to fulfill the request of a branch manager, the user next enters the various parameters for the query construction.

Melchione: column 22, lines 10-45

In general, when on an account path the user will specify not only product related conditions using variables that are totally dependent on the account/product, such as financial (account balance, amount of transfers, etc.) and descriptive (open date, marketing status) variables, but also other conditions using variables that are indirectly related to the account, such as organization level, geographic location, and so forth. Relationally, these other variables are part of foreign keys, and their presence in the account row establishes the relationship between the Account entity and the ORG or Geographic entities.

Most probably the logical intention of the user will be that the search of the households be limited to this organization level, geographic location, etc. In that case, the above SELECT statement will not accomplish the user's intent. The following expanded SELECT statement will make this point clear:

```
SELECT DISTINCT HH.sub.-- NO
FROM ALA A
WHERE
HH.sub.-- NO NOT IN
(SELECT HH.sub.-- NO FROM ALA B
WHERE
((B.ORG AND B.GEOGRAPHIC, etc. conditions)
AND
({B.PRODUCT.sub.-- CD=? AND (B.other.sub.-- product.sub.-- conditions
...)))
```

In this formulation, the subselect has the ORG/GEOGRAPHIC conditions, so the product condition searches within this subset of accounts (households). However, when the complement is executed, there is no such limitation and the database will search among all the households including ones that do not belong to the organization and geography. The resulting set of households will in general be much larger and not be what the user expects.

These portions of Melchione merely refer to "summary variables," "characteristics" of a product, displaying a menu to create a new query, report, or process, or to open an existing one, and

creating a SELECT statement specifying conditions and variables. However, the “summary variables” referred to in Melchione merely relate to totals, averages, etc. Moreover, the “characteristics” referred to in Melchione are characteristics of a product, such as open date, individual account balance, etc.

In addition, the displaying of a menu or the creation of a SELECT statement in Melchione do not include specifying one or more Variable Groups, wherein each Variable Group is a set of one or more Analytic Variables with similar characteristics and each Analytic Variable is comprised of both primitives and conditions.

Indeed, there is no discussion in these portions of Melchione of Variable Groups that are sets of Analytic Variables with similar characteristics. Indeed, nowhere do these portions of Melchione describe any groups.

In addition, there is no discussion in these portions of Melchione of Analytic Variables that are comprised of both primitives and conditions. As defined in Applicants’ specification, Analytic Variables are comprised of primitives and conditions that describe how the Analytic Variables are derived from the operational data, wherein primitives are base variables, while conditions are predicates, aggregates or other functions.

The Office Action assertions that it is known that SQL databases utilize primitives and conditions to sort data are insufficient and based solely on hindsight, rather than any teaching of the Melchione reference. Nowhere does Melchione define Analytic Variables that are comprised of both primitives and conditions.

2. The Melchione reference does not teach or suggest “creating an Analytic Data Set Template containing one or more of the Analytic Variables selected from the specified Variable Groups that are required for a specific analysis task, wherein execution conditions are defined for the Analytic Data Set Template.”

The Office Action also asserts that Melchione teaches Applicants’ claimed limitation “creating an Analytic Data Set Template containing one or more of the Analytic Variables selected from the specified Variable Groups and required for a specific analysis task, wherein execution conditions are defined for the Analytic Data Set Template,” at column 17, lines 62-67, which is set forth below:

Melchione: column 17, lines 62-67

If the user requests and saves the keys, the user can then use the saved keys to pick up different set of fields (using the data extractor component of the database engine) at different times. Alternatively, the user can further reduce the set of keys (and save the new set, instead of, or in addition to the old set of keys) by applying additional criteria to the old set.

These portions of Melchione merely refer to saving keys for later use. However, the keys referred to in Melchione are merely keys used to access data that satisfy user criteria.

There is no discussion in these portions of Melchione of Analytic Data Set Templates that contain the Analytic Variables selected from specified Variable Groups and that are required for a specific analysis task. Moreover, there is no discussion in these portions of Melchione of execution conditions that are defined for the Analytic Data Set Templates.

The Office Action assertions that templates are known with SQL databases as well as the use of conditional statements for sorting the data are insufficient and based solely on hindsight, rather than any teaching of the Melchione reference. Nowhere does Melchione define Analytic Data Set Templates that contain Analytic Variables selected from specified Variable Groups that are required for a specific analysis task, or the definition of execution conditions for the Analytic Data Set Templates.

3. The Melchione reference does not teach or suggest "automatically generating SQL statements to retrieve and generate the Analytic Variables contained in the Analytic Data Set Template from a database using the primitives and conditions of the Analytic Variables."

Finally, the Office Action asserts that Melchione teaches Applicants' claimed limitation "generating SQL statements to retrieve and generate Analytic Variables contained in the Analytic Data Set Template from a database using the primitives and conditions of the Analytic Variables," at column 18, lines 24-30, which is set forth below:

Melchione: column 18, lines 24-30

The data extractor component of the database engine 40, which can execute alone or with the first key extract component, has the function of pulling the desired data from the database once the keys have been extracted. If it executes with the first component, the keys may not even have to be saved on a table but passed through host program variables from previous SQL statements.

These portions of Melchione merely refer to a data extractor component of a database engine that retrieves the desired data from the database using keys. However, as noted above, the keys referred to in Melchione are merely keys used to access data that satisfy user criteria.

There is no discussion in these portions of Melchione of Analytic Data Set Templates that contain Analytic Variables selected from specified Variable Groups, wherein the Analytic Variables are comprised of both primitives and conditions.

The Office Action assertions that Melchione utilizes a SQL database, which means that the SQL query language is used to structure queries and extract information from the database, and that SQL is known to contain primitives which are basic operations used to support more complex operations such as functions, procedures and methods, are insufficient. Nowhere does Melchione define Analytic Data Set Templates or Analytic Variables, as those terms are defined in Applicants' application.

Indeed, the SQL of Melchione cannot be equated to the Analytic Data Set Templates, Variable Groups and Analytic Variables of Applicants' invention, because, in view of Applicants' claim limitations directed to "automatically generating SQL statements," this would mean that the SQL statements of Melchione are used to generate other SQL statements, which is not shown by Melchione.

4. Applicants' invention provides advantages and benefits over the Melchione reference.

The Analytic Data Set Templates, Variable Groups and Analytic Variables of Applicants' invention are entities or objects at a level higher than (or different from) SQL. Specifically, the recited elements of Applicants' invention comprise an automated Analytic Data Set Creation service, which simplifies and automates the process of creating analytic data sets useful for modeling and analysis out of operational data stored in the relational database.

In using the Analytic Data Set Creation service, the user first specifies one or more Variable Groups, wherein a Variable Group is a set of Analytic Variables with similar characteristics, and the Analytic Variables are comprised of primitives and conditions that describe how the Analytic Variables are derived from the operational data. As noted above, primitives are base variables, while conditions are predicates, aggregates or other functions.

The user creates an Analytic Data Set Template containing the desired Analytic Variables that are required for a specific analysis task. These Analytic Variables are selected from one or more

Variable Groups for inclusion in the Analytic Data Set Template. Moreover, execution conditions can be defined for the Analytic Data Set Template.

Finally, the Analytic Data Set Creation service performs a Smart SQL Generation function that automatically generates SQL statements that retrieve and/or generate the desired Analytic Variables contained in the Analytic Data Set Template from the relational database using the specified primitives and condition.

A number of benefits are provided by the Analytic Data Set Creation service. For example, the service saves time and effort by analysts and support staff, so analysts can spend more time doing analysis, rather than mining data from the relational database. Moreover, the Analytic Data Set Creation service leverages work previously done by creating a library of analytic variables that can be used by anyone, which promotes consistent use of information. In addition, the Analytic Data Set Creation service makes it much easier to deploy models for use by multiple analysts.

Thus, Applicants' attorney submits that independent claims 1, 10 and 19 are allowable over the Melchione reference. Dependent claims 2-3, 5-9, 11-12, 14-18, 20-21 and 23-27 are submitted to be allowable over Melchione in the same manner as the independent claims, because they are dependent on independent claims 1, 10 and 19, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-3, 5-9, 11-12, 14-18, 20-21 and 23-27 recite additional novel elements not shown by Melchione.

IV. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

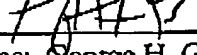
Respectfully submitted,

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